SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants*:**

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [help]

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [help]

1. Name of proposed project, if applicable:

   North Ranch Lime Stabilization and Recycling Facility [help]

2. Name of applicant:

   Bio Recycling Corporation

3. Address and phone number of applicant and contact person:

Roger Hickey, President
Bio Recycling Corporation
PO Box 982
Centralia WA 98531
360-507-1865 [help]

4. Date checklist prepared: [help]

February 17, 2016

5. Agency requesting checklist: [help]

Washington Department of Ecology

6. Proposed timing or schedule (including phasing, if applicable):

The facility began operations in 1992 and is currently operational although new processes are in various phases of development. A previous SEPA document for septage and sewage sludge land application was originally submitted by Solganic Services Corporation to Mason County Health Department for this site in 1986. The permit for the site was transferred to Bio Recycling Corporation in 1991 and a SEPA checklist was submitted by Bio Recycling Corporation and approved by Mason County Health Department in 1992 for the treatment plant site. This checklist has been prepared as a replacement for the previous documents to serve as the basis for future permitting activities.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Bio Recycling Corp. has expanded its original treatment facilities since 1992 by; adding tanks to increase holding times from 30 minutes to 24 hours, and adding a second screening step to improve the removal of inorganic trash accomplished by the original 3/8" bar screens. Additional tanks were added to increase capacity and add the capability to thicken and dewater. Dewatering was implemented in 2014, becoming fully operational in the fourth quarter of 2014. Future additions include plans to add dissolved air flotation in the second quarter of 2016 to reduce the nitrogen content of filtrate produced during thickening and dewatering. Further additions may include pasteurization of dewatered biosolids and the liquid biosolids, biological or physical denitrification, a holding lagoon for winter storage, and filtrate transport for offsite treatment. If the future additions are not effective or feasible and current and planned practices fail to produce proper fall soil nitrate concentrations, annual volumes will be reduced and plant operations will be suspended during winter months.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Webb Hill Biosolids Facility Hydrogeologic Investigation - Phase 1, Report prepared by Aspect Consulting, September 6, 2007

Webb Hill Biosolids Facility Hydrogeologic Investigation - Phase 2, Report prepared by Aspect Consulting, June 30, 2008

Groundwater Age Dating, Webb Hill Biosolids Facility Hydrogeologic Investigation- Phase 2, Memorandum prepared by Aspect Consulting, May 15, 2012

Groundwater Age Dating Data Results Letter, Letter from USGS to Mason County Department of Community Development, June 26, 2008.

Annual Soil Sampling data and reports, 1999 - 2015

Regular biosolids testing data, 1992- 2015

Mason County Public Health Quarterly Monitoring Reports (1997 – 2007)

PGG Groundwater Monitoring Data from 2007 - 2011

PGG Quarterly Groundwater Monitoring Reports (2012 to 2015)

Summary of Field Work, Infiltration Test Results, Drill Logs, Draft Technical Memorandum prepared by PGG, December 18, 2007

Summary of 2013 Drilling Activities, North Ranch Facility, Technical Memorandum prepared by PGG, October 1, 2013

Biosolids Application Rates and Groundwater Nitrate Concentrations, North Ranch Bio Recycling Site, Technical Memorandum prepared by PGG, September 25, 2015

Response to Ecology Comments on September 25, 2015 Technical Memorandum for North Ranch Bio Recycling Site, Letter report prepared by PGG, February 2016.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None

10. List any government approvals or permits that will be needed for your proposal, if known. [help]

General Permit for Biosolids Management from the Washington Department of Ecology. If EQ biosolids processes are implemented, air quality permits issued by the Olympic Regional Clean Air Agency would be required for gas or wood fired boilers.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]

Summary
The project operates in accordance with WAC 173-308 and is permitted by the Washington Department of Ecology. It consists of a treatment facility and adjacent 293 acre land application site. The treatment facility employs an EPA and WDOE approved alkaline stabilization process using quicklime. Currently, the adjacent land application site receives surface applications on a year around basis to produce agricultural and forestry crops. In the next 2-3 years it is hoped a surface impoundment will be constructed to allow for the application of liquid biosolids during the summer months. This will facilitate the best use of water during drier periods when grass crops will require it and benefit most from it. Forestry crops will only be irrigated during the summer months using drip irrigation to ensure that tree water requirements are met as well as to minimize water losses.

Nitrogen requirements for agricultural and forestry crops are determined by guidance from Ecology publication 99-508 "Managing Nitrogen from Biosolids"
Nitrogen requirements for crops will be discussed in the Site Specific Land Application Plan (SSLAP). The SSLAP is available for review and provided as an attachment to this checklist.

The facility serves as a disposal option for septic tank pumping companies. These companies typically pump liquid wastes from local septic tanks, small wastewater treatment plants, sewage pump station vaults, vault toilets, cesspools, holding tanks, RV dump stations, portable toilets, marine sanitation units and restaurant grease traps collectively referred to here-in as septage. Each septage delivery is weighed on truck scales, unloaded, screened, degritted, mixed with lime and held in above ground tanks for 24 hours at the prescribed pH that results in Class B biosolids. Samples are collected and analyzed according to state and federal regulations and results are reported to the WDOE. Historically, the treated biosolids have been either surface applied without further treatment or the solids are dewatered and sent to permitted Beneficial Use Facilities (BUF) and the remaining liquid is applied to the land. Irrigation/manure spray equipment is used for biosolids application to most of the acreage which currently produces primarily forage crops and some existing stands of conifers. The liquid portion may be further treated to reduce ammonia and organic nitrogen, COD and BOD and suspended solids. Future plans call for pasteurizing both the dewatered solids and the liquid fraction to meet Class A exceptional quality criteria. Exceptional Quality products manufactured on site may receive further refinement on or offsite and eventually marketed as soil amendments.

Proposed and Project Description
The North Ranch facility accepts septage, sewage sludge, and biosolids and processes it in accordance with 40 CFR 503 and WAC 173-308. The primary methods of treatment include lime stabilization, solids separation, dewatering and heat treatment. The following description

covers current development as well as currently anticipated future processing. See Attachment A - Site Plan. The descriptions below follow Attachment B, the schematic diagram of the facility. See Attachment C - Site Plan

1. Weight Scale – Customers weigh at the scale before and after discharging their load. The weight of material received from each load is recorded and volumes are determined by dividing the weight in pounds by 8.34 for septage and treatment plant sewage sludge or 9.0 for portable toilet materials, which have a higher specific gravity
2. Screen and Grit removal – From the customer trucks, the received material flows into a 3/8" bar screen that removes most of the inorganic trash but permits long narrow types of trash e.g. plastic razor blade covers, plastic tooth picks, plastic wrappers. From the screen enclosure the material flows to an in-ground tank. The tank contents are pumped through a second screen which consists of 3/4" diameter stainless steel punch plate, scrapers and brushes and a grit channel to remove grit. The round holes of the punch plate are effective at removing the types of trash that pass through the bar screen.
3. Lime Stabilization Process From the grit tank the liquid flows to an adjacent 30,000 gallon above ground tank for queuing or directly to a 20,000 gallon in-ground mixing tank. A portion of the mixing tank contents are also pumped through a lime mixing box. Lime is discharged from the lime silo by a feed auger into the mix box and the lime slurry is discharged back into the mixing tank. Mixing is accomplished by recirculating the tank contents through several agitation hoses in the mix tank. Sufficient lime is added to raise the pH to over 12. The treated material is then pumped to holding tanks. The lime treated material is kept in the holding tanks for 24 hours and the pH is measured after 2 hours and 24 hours with the pH maintained above 12 for at least 2 hours and above 11.5 for at least an additional 22 hours. In the event that the pH requirements are not met, the material is transferred back to the treatment tank and more lime is added to meet the requirement.
4. Land Application – See Attachment D - Field Map. Following treatment the Class B liquid material can be spray applied through a network of underground PVC pipes and risers to the adjacent permitted land application site. Hard-hose hose reels are used to transfer the liquids from the risers to the fields through a manure gun that is pulled back to the reel as liquids are pumped. For the next 2-3 years, until a storage lagoon is operational, liquids can be taken off site during the winter months or winter plant operations are terminated, winter application will continue at the lightest possible nitrogen loading, less than 25% of 2008 levels on most of the acreage where intensive cropping is not practical. This will be accomplished by applying only the filtrate produced by dewatering, applying very light applications during colder months when nitrification is very slow and usually resting each area between applications over 40 days. In addition nitrogen levels will be reduced beginning in the second quarter of 2016 by using dissolved air flotation. Further improvements will be implemented if effective and economically feasible including either biological or physical denitrification which may have the potential to reduce nitrogen concentrations up to 90%. Either process will probably be necessary to make the filtrate suitable for discharge to an offsite wastewater treatment plant. .
   Fields that are level enough for the use of conventional haying equipment will be used for the production of hay on up to approximately 244 acres. Starting in spring of 2016, field 1 will be plowed and replanted to a blend of orchard grass and alfalfa. Both plants use large quantities of nitrogen if harvested at the optimal time. 62 acres in Fields 1 & 2, will receive the bulk of liquid application during the year, especially during the drier summer as irrigation to produce up to 3 cuttings. The remainder of the acreage is in portions of fields 3, 4, 4b and 10. These fields will be overseeded with a blend of perennial rye grass and orchard grass to fill in any bare spots and maximize nitrogen use. Reseeding, periodic mowing and herbicides will be utilized as necessary to keep the site fully vegetated with desirable grasses. Hay fields that will not receive summer liquid applications will likely only produce a

first cutting. If sufficient rainfall occurs, a second cutting is possible. Grazing may follow the first cutting. It is believed a single cutting taken at the proper time will utilize more nitrogen than grazing. These areas may receive applications after a storage basin is built but not until fall soil nitrogen and crop protein levels indicate a nitrogen deficiency exists. Over the next few years, 2016-2018, fields 2, and possibly 3, may be cultivated and replanted to alfalfa and orchard grass, depending upon the results from field 1.

Field 11 and the portions of fields 3, 4 and 4b that are not currently suitable for haying will only have forage removed by grazing up to twice per year. Those areas that are only grazed will not receive any filtrate irrigation after the surface impoundment is operational, and minimal application until then.

Beginning in 2016, about 5 acres in the low lying area of field 3 in the SW corner will be planted to hybrid poplars to utilize as much stratified water and nitrogen and prevent as much subsurface loss from the site as possible. If the poplars survive and grow well, another area will likely be planted in early 2017, about 8 acres in south portion of field 10. Hybrid poplar can utilize up about 240 lbs of nitrogen per year from age 5-10 according to WDOE publication #99-508, when not limited by moisture. Moisture demand is not at its maximum until the poplar tree canopy has closed. It may take a few growing seasons to determine if the North Ranch soils are suitable. If they are, approximately 69.0 acres of low lying areas could be planted, perhaps more if they thrive. If poplar trees do not do well, Douglas-fir may be planted or some areas may be graded and made suitable for hay production.
Specific nitrogen and water/irrigation requirements for each crop and their designated areas are addressed in detail in the SSLAP.

5. Water and soil monitoring - Ground water is tested quarterly in a network of monitoring wells. Surface water, when present is sampled as well. Sampling is performed by Pacific Groundwater Group and results are reported directly to the Department of Ecology. Filtrate water used to irrigate the forage fields will be monitored using rain gauges capable of holding one foot of water. This will help to know the exact amount of liquid to be applied. *Water Mark* sensors will be located in 3 areas of each of the hay fields to determine the need for irrigation. Because of the extremely low water holding capacity of the soil it may be necessary to irrigate at night to improve water use efficiency. By not irrigating until the crop requires water and by knowing and adjusting the irrigation to ensure maximum crop uptake – water losses to ground water should be reduced if not eliminated. Fall soil sampling is performed and reported to Ecology by Phil Small, a soil scientist with Land Profile. Soil sample augers and push tubes have been tried in the past but due to stoniness of the soil these sampling techniques and equipment have not worked. For the past 8 years 15 backhoe-excavated pits that are scattered randomly in each field have been sampled in 1 foot increments. The samples are scraped from a cleaned profile in each pit to a depth of 2 feet. The results to date have been varied and confusing but still somewhat useful. The soil samples are screened to remove coarse fragments before they are sent to a soils lab. The soils lab analyzes the samples for pH, Calcium, Sulfur, phosphorus, potassium, magnesium, zinc, boron, sodium, organic matter, ammonium, and nitrates. Fall soil nitrate concentrations are used to determine if biosolids are being applied at agronomic rates. In the past poor nitrogen harvesting by grazing or haying and large amounts of nitrogen mineralization of organic matter related to previous biosolids applications have led to high levels of soil nitrates in the fall. By dramatically increasing the plant populations in the grazing fields and by harvesting high protein hay from the forage fields nitrogen uptake during the summer growing season will reduce nitrogen stores in the soil. In the future those nitrogen demands may result in a deficit and require applications of solids to meet crop nitrogen requirements. This is unlikely to occur on the grazing fields.

To help confirm that accuracy of fall soil samples and more precisely determine the proper fall soil nitrate levels that do not lead to excessive leaching losses, a network of passive capillary sampler (PCAPs) lysimeters is being evaluated and considered for installation in 2016. Since these lysimeters constantly apply passive tension to the soils (unlike the onsite suction lysimeters L-1 and L-2, which can only sample when a vacuum is pulled on them), they can be used to quantify percolation volumes out of the root zone and annual leached nitrate concentrations. Frequent sampling or the use of pressure transducers can quantify collected water volumes, which can then be analyzed to calculate leached nitrate loads from the root zone. A network of PCAPs could be used to assess the effectiveness of different BMPs, quantify long-term nitrate leaching trends, and evaluate onsite spatial variability. Using PCAPs, we believe that the concentration, quantity, and timing of nitrate leaching from the root zone will be more accurately determined, and envision using PCAPs data to help inform management practice decisions.

6. Thickening and Dewatering – The Class B liquid is also diverted to the thickening and dewatering equipment. Polymer is added to the material and the liquid and solid fractions are separated in a thickener. The solids flow on to a belt press where they are increased up to 35 percent total solids content. The liquid produced from the thickening and dewatering process, referred to as filtrate, is currently pumped to (3) 30,000 gallon above ground holding tanks before being pumped to the field for land application. In the future further processing of the filtrate to reduce organic and ammonia nitrogen is anticipated. Recent pilot scale testing has shown dissolved air flotation is capable of reducing organic nitrogen by 45%, ammonia by 30% and total suspended solids by 95%. In addition, several other technologies including tank aeration, ammonia stripping towers, biological and physical denitrifying process and land applying heated filtrate for greater ammonia volatilization. These capabilities will provide the flexibility to adjust biosolids nitrogen concentrations as needed for a variety of crop nutrient and irrigation needs. For example, if soil nitrate levels and/or crop nutrition declines from reduced biosolids application and increased cropping, dissolved air flotation and/or dewatering can be reduced to meet crop needs.
7. Class B dewatered solids disposition - Dewatered solids will likely be delivered to a permitted BUF, or a Class A manufacturing facility. It is possible in the future that there may be advantages to applying some of the Class B solids on site. Dewatered biosolids produced from Bio's treatment method are high in organic matter and low in available plant nutrients making it useful for building soil fertility more quickly with less risk of nitrate leaching.
8. Heat Treatment – Compliance is accomplished by heating to temperatures and held for times as required by Class A Alternative 1 as defined in 40 CFR 503 and WAC 173-308.
   A. Liquid – The liquid biosolids, either before dewatering or the liquid fraction produced by dewatering (filtrate) may be pasteurized. The liquid is passed through a heat exchanger in which it is heated for the required time at the required temperatures. The required time and temperature are maintained in a known volume plug flow piping loop. To improve heat exchanger efficiency, the filtrate may be clarified by dissolved air flotation.
   B. Dewatered solids – The dewatered solids will be heat treated after dewatering in a rendering type cooker that consists of a horizontal steam jacketed cylinder with a rotating armature inside. The solids are fed into one end of the cylinder and discharged from the other. Steam is introduced into the outside jacket of the cooker and can be introduced into the rotating internal armature. The time it takes the solids to travel through the cooker is determined by the feed rate. Temperature and steam pressure readings are taken to ensure the cooker is maintaining the desired temperature. The Class A alternative 1 Method is currently used by Bio at the Centralia plant. Time and temperature trials at Bio's Centralia plant have demonstrated the minimum time of 30 minutes at 70 degrees Celsius is consistently achieved. Higher temperatures are the norm but in no case is the holding time less than 20 minutes.

C. A steam boiler will likely be the source of heat for the heat exchanger and cooker. The boiler may be fueled by propane or wood.

9. Class A product marketing – The Class A product will be marketed in bulk for agricultural, horticultural and landscaping users. The solid products may be further processed by blending or composting with wood residuals. The liquid product will be used for irrigation and as a plant nutrient.

10. Odor Control – Due to the size and remote location of the site, there are currently no plans for odor control beyond the current alkaline stabilization process. Before installing any equipment for Class A EQ products that is not completely enclosed, the Olympic Region Air Quality Control Agency will be contacted regarding odors. If odor control were needed in the future any of the following, which have been utilized at Bio's Centralia facility, may be implemented.

A. Release prevention – By raising the pH of the received material to between 9 and 10, the fraction of reduced sulfur compounds that are volatilized is dramatically reduced. For hydrogen sulfide the fraction that can be volatilized is less than one percent at a pH of 9.

B. Capture and treatment – By enclosing processing equipment, any released odorous gases can be captured using forced ventilation. The solids processing equipment can be enclosed and the captured gases treated in a bio filter or scrubber. Additional treatment equipment may be added in the future.

C. Dispersion – Discharge of captured air and odorous gases through a stack will aid in the dispersion of any problem odors.

Processing features and equipment that may be added in the future and are a part of this proposal include the following:

1. Surface impoundment for winter liquid storage
2. Additional treatment tanks
3. Additional Class A product tanks
4. Class A soil product storage area
5. Tank aeration systems
6. Yard paving
7. Additional odor control equipment
8. An alternative source of energy for heat treatment
9. Alternative equipment for heat treatment
10. Covered wood storage for boiler fuel
11. Biological denitrifying bacteria as used at most wastewater treatment plants
12. Physically remove nitrogen with the addition of zeolite to filtrate followed by dissolved air flotation. Zeolite is a naturally occurring mineral that has the ability to attract and hold ammonium along with other cations which can then be removed from liquid with dissolved air.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]

The North Ranch Lime Stabilization and Recycling Facility is located at 820 E Webb Hill Rd, Union WA. Which is situated in Section 18, T21N, R3W. It consists of approximately 400 acres of undeveloped land that is accessed from the Webb Hill Rd via the McReavy Rd. in Mason County. The site is rolling. Pasture grass, Douglas and Noble fir, Scotch broom and blackberries currently vegetate the site. Forested land surrounds the site. See attached Vicinity Map

B. ENVIRONMENTAL ELEMENTS [help]

1. Earth [help]

a. General description of the site: [help]

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)? [help]

30%

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]

Alderwood gravelly sandy loam

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]

None

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

Limited grading will be needed to level areas where storage facilities are located. Affected areas will likely not exceed one acre

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.[help]

The risk of erosion is slight but best management practices for erosion and/or storm water controls will be employed during filling, excavation and grading
Mulch hay may be harvested on site for use in erosion control.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]

Less than 1%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]

None

2. Air [help]

a. *What types of emissions to the air would result from the proposal during construction,* operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]

Diesel engine exhaust from approximately 30 customer deliveries per day. Farm and forestry equipment engine exhaust for irrigation, harvest, processing and transport. Gas or wood fired boiler emissions. Hydrogen sulfide and Ammonia volatilization from customer unloading, liming, tank agitation, dewatering. and pasteurization. No air quality emissions permit is required for current operations. In the future, assuming a gas fired boiler and pasteurizing equipment is used that is similar to that used by Bio at its Centralia plant, emissions should be less than approximately 2% of permit limits. 2014 emissions report stated the following in lbs./yr; nitrous oxides 53.3, VOC's 8.2, Boiler particulate matter 11.3, SO2 .9,lime silo particulate matter .12 and ammonia .5.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]

None

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]

Alkaline stabilization stops the production of odorous gases from bacteria in the septage. Due to the sites remote location odors are not expected to be a concern

3. **Water** [help]

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [help]

There is a seasonal unnamed pond in the SE corner of the site that is surrounded by native vegetation. The nearest application area to this pond is over 300 feet to the west. The pond has no surface outlet.
Outside of field 3 near the SW corner there is a seasonal pond that has no outlet. Both of these areas are listed as wetlands by Mason County.

In the SW portion of Field 3, there is a low area where a pond forms for a few days following heavy rainfall. It has no surface outlet.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]

The seasonal unnamed pond in the SE corner of the site is included in the permit area but is separated from the application area by fencing. No application or livestock are permitted in the 300 feet of buffer area that lie between the fences and the seasonal pond. The seasonally ponded area outside of the SW corner of field 3 is fenced off from the application area but not livestock. Land application will not occur during the periods of November- March on the part of Field 3 in the SW portion that inundates after heavy rains. Hybrid poplars are going to be planted on all low lying areas of the site. There will be approximately 69 acres that will not receive any biosolids applications or filtrate unless it is required to keep the trees alive during periods of extreme drought or nutrient deficiency determined from tissue analysis.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]

None

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]

No

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help]

No

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]

Spillage from tanks or piping is unlikely to reach any streams or water bodies because there are no streams on or near the site. Wetland areas are either protected from piping spills by distance or bermed soil that prevent liquid biosolids migration from the fields to the wetlands. Since 1992 there have been occasional piping leaks and breaks, no tank ruptures or leaks and no instances of biosolids liquids reaching wetland areas or streams. If a spill is large enough to pool in a low area, it can be cleaned up by vacuum tanker trucks or trash pumps. Most of the biosolids applied are filtrate which acts much like water and soaks into the sites porous soils very quickly with little or no ponding. Leak volumes are difficult to state with certainty but we estimate they are usually less than 2000 gallons.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [help]

A 6" water supply well is located in the NW 1/4 of the site near the treatment facility. It is approximately 180 feet deep. Approximately 4750 gallons of ground water from an onsite water supply well are utilized each day, 3250 gallons for polymer, 1000 for equipment cleaning and 500 gallons for cleaning the customer screens and unloading area. During the summer, approximately 300 cattle use additional water but the quantity is not known. The University of Nebraska estimates 2 gallons of water per day per 100 lbs. of body weight during warm weather. 300 cow calf pairs could peak at about 5000 gallons per day during the summer. Water is not discharged to ground water from any devices or structures. As soon as a storage surface impoundment can be built, liquid applications will be discontinued from October to April unless crop failure from drought is likely.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals . . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]

None
This site has received class B biosolids applications since 1992. Soil, surface water and groundwater have been monitored for years as well (as has vadose zone water from two existing lysimeters). Monitoring results reported to Ecology show that some nitrates produced from the biosolids applied to the surface have reached the water table and have accumulated in groundwater at levels above the drinking water standard of 10 mg/l in some of the monitoring wells.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]

Runoff is minimal on the site. When present it collects in natural low areas where it either percolates or evaporates.

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]

Beneficial use of biosolids through land application is protective of surface and groundwater when done properly. Biosolids contain very low levels of nitrates but they do form in the soil from the ammonia and organic nitrogen present in the biosolids. Buffers are established to protect ground water and surface water. Land application does not occur on sites at times when runoff, or leaching is likely. Nitrates resulting from

excessive or improperly timed application can potentially enter ground waters via leaching. If irrigation water is applied at rates greater than plant uptake or more than the soil can hold in the rooting zone, leaching may also occur. In order to retain the water for plant use, and minimize the potential for leaching, irrigation may be done at night when temperatures are lower. This practice will help to keep plants alive during periods of high stress, and meet some nutrient requirements.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe. [help]

No

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any: [help]

None

4. **Plants** [help]

a. Check the types of vegetation found on the site: [help]

_x__deciduous tree: alder, maple, aspen, other
_x__evergreen tree: fir, cedar, pine, other
_x__shrubs
_x__grass
_x__pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered? [help]

High protein hay consisting of an alfalfa/orchard grass mix will be harvested in three cuttings. The first cutting will be done in mid-May, and will be in the form of baleage. It is expected to yield 5 wet tons per acre. Second and third cuttings will vary depending on the weather, but harvests should range from 3 to 5 wet tons per acre. In the future hybrid poplar trees may be harvested for energy, fiber or lumber production. Tonnage will vary based upon the type of use for the wood. This will depend largely upon the market for each type of product.

c. List threatened and endangered species known to be on or near the site. [help]

None

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]

None

e. List all noxious weeds and invasive species known to be on or near the site. [help]

Scotch broom

5. **Animals** [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.[help]

birds: hawk, eagle, robins, songbirds, geese, ducks, crows
mammals: deer, bear, coyote, rabbit, squirrel
fish: none

b. List any threatened and endangered species known to be on or near the site. [help]
Although threatened or endangered species have not been observed on the site, The WA Department of Fish and Wildlife lists the following species that could potentially be near or visit the site in Mason County. (see attached list).

c. Is the site part of a migration route? If so, explain. [help]

No

d. Proposed measures to preserve or enhance wildlife, if any: [help]
No measures are taken to preserve or enhance wildlife. However, geese and deer have been known to graze the pasture areas frequently. Deer can be seen onsite daily. The entire area is fenced to contain cattle. As a result, deer numbers are not more than a few head at any one time. Geese can be seen onsite daily primarily during the wetter months. Although the fields are primarily managed for the production of forage, deer and geese do seem to benefit from the additional forage and vegetative cover.

e. List any invasive animal species known to be on or near the site. [help]

None

6. **Energy and Natural Resources** [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, *manufacturing, etc.* [help]

Electricity, propane and/or wood for boiler fuel for treatment and manufacturing

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help]

No

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]

Bio fuels may be produced on the site to reduce propane use and electricity delivered from the local utility

7. **Environmental Health** [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. [help]

Environmental health hazards are reduced by the alkaline stabilization process used at the site for liquid wastes delivered by customers. The process is effective at eliminating bacteria, viruses and parasites. Spills are possible from customer tanker trucks and vendors delivering raw materials such as quicklime. There have been no spills from tankers entering or leaving the site since operations began in 1992. Customer deliveries to the site are made in licensed pressure rated trucks and tankers. If a spill were to occur while entering the site, employees have been instructed to contact management and utilize the equipment on site to contain and remove the spill with the vacuum capabilities of Bio's or customer vacuum trucks. The customer unload area slopes to the adjacent in-ground mixing tank, any spillage during unloading would flow into the tank where it would be treated. Soap and water are available at the customer unloading areas for customers or employees splashed with untreated materials. Quicklime is delivered to the site in bulk tankers carrying up to 30 tons. The quicklime is transferred from the tanker to a 50-ton lime silo via 4" diameter pressure rate hoses carried on the lime delivery tanker. Quicklime is very reactive to moisture and could damage skin or eyes from direct exposure. Personnel stay away from the hose connection points during silo filling. To date there have been no releases of quicklime during silo filling.

1) Describe any known or possible contamination at the site from present or past uses. [help]

Out of concerns over water quality issues to the north in Hood Canal, EPA, WDOE and Bio Recycling Corp. jointly installed a network of up gradient and down gradient monitoring wells and vadose zone lysimeters in 2007 to determine the direction of groundwater flow and any impact from the application of biosolids. Ground water flow was determined to be southwest away from Hood Canal. The wells also confirmed that groundwater below and at the down gradient borders of the site had elevated nitrate levels. Groundwater nitrate levels have declined since 2007 in most downgradient wells but still remain near or above 10 mg/l in some despite reducing application volumes by 50 percent since 2007. Tank thickening portions of the treated biosolids from 2009 thru 2013 reduced site nutrient loading but did not produce consistent reductions in fall soil nitrate levels. Mechanical dewatering began in the 4th quarter of 2014 and continues reducing site nitrogen loading by nearly 75% from 2007 levels. The time lag between the ground surface and the underlying aquifer, according to a 2008 USGS report and subsequent analysis by Pacific Ground Water Group, is estimated at 3-4 years. In 2013 Bio Recycling Corporation installed 3 offsite monitoring wells about halfway between the project site and the down gradient domestic wells. Sampling to date show little if any project related impacts. A recent analysis by Pacific Ground Water Group of hydrologic information gained since 2007 has estimated that ground water from Bio's project site has much higher flow velocities than previously estimated, and likely has reached the offsite monitoring wells and the down gradient domestics wells years ago without significant impact. In 2 of the 3 new monitoring wells and the domestic wells, nitrate concentrations have remained below 1 mg/L, and therefore no impact is apparent. At one of the new monitoring wells (MW-9), nitrate concentrations have ranged from 0.1 to 3.6 mg/L, with a median concentration of 0.5 mg/L.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity. [help]

None

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project. [help]

Quicklime is stored and used to treat the customer deliveries to class B biosolids standards. Acids may be utilized in the future to adjust pH levels to favor biological or physical denitrifying processes.

4) Describe special emergency services that might be required. [help]

None

5) Proposed measures to reduce or control environmental health hazards, if any: [help]

Reduce application rates from historical levels, employ additional processing to reduce nitrogen content of materials applied to the land, in 2016 increase land management practices to begin to aggressively produce and harvest forage from the site in addition to grazing, as soon as practical minimize applying liquid at times and amounts that favor the loss of nitrates when plants are dormant due to low winter temperatures, or during times that soils are saturated. In addition the following options will be utilized as soon as practical as needed, construction of a surface impoundment for the storage of liquids during the winter months, nitrogen reducing processes, off site transport of liquids, future closure of the treatment plant during winter months.

b. Noise [help]

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]

None

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. [help]

None

3) Proposed measures to reduce or control noise impacts, if any: [help]

None

8. **Land and Shoreline Use** [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]

Agriculture and forestry. No impact on current land uses.
Residences are scattered around the site with the nearest about 1100 feet to the SE, 2000 feet to the NW and 3000 feet to the SW. Water supplies for the down gradient residences to the SW could be affected by nitrates although regular sampling has not shown any impacts.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [help]

Yes. There will be no conversion from agriculture or forestry.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how: [help]

No

c. Describe any structures on the site. [help]

3 Cargo containers that serve as office and supplies storage, a 1200 sq. ft. dewatered cake covered storage area consisting of asphalt base, fabric roof and ecology block walls, a 480 sq. ft. dewatering building consisting of an asphalt base, metal frame work with sheet metal sides and roof. An 80' long truck scale is located just south of the customer unload area with each end covered with sheet metal to protect the electronic equipment customers use to check in and out.

d. Will any structures be demolished? If so, what? [help]

No

e. What is the current zoning classification of the site? [help]

Rural residential 20 ac. min. See attached Zoning map

f. What is the current comprehensive plan designation of the site? [help]

Rural area

g. If applicable, what is the current shoreline master program designation of the site? [help]

NA

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]

Yes, there are two seasonal wet areas, one near the SE corner of the SE 1/4 Section 18 and one near the NW corner of the SE 1/4, Section 18 T21N, R3W

i. Approximately how many people would reside or work in the completed project? [help]

None

j. Approximately how many people would the completed project displace? [help]

None

k. Proposed measures to avoid or reduce displacement impacts, if any: [help]

None

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]

None

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any: [help]

The proposal uses the land for biosolids treatment and beneficial use through land application to agricultu

9. **Housing** [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [help]

None

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help]

None

c. Proposed measures to reduce or control housing impacts, if any: [help]

None

10. **Aesthetics** [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]

20 feet high max, fabric or metal roofs, ecology block walls

b. What views in the immediate vicinity would be altered or obstructed? [help]

None

b. Proposed measures to reduce or control aesthetic impacts, if any: [help]

None

11. **Light and Glare** [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]

Lighting at the facility is minimal and is not visible from roads or residences

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help]

No

c. What existing off-site sources of light or glare may affect your proposal? [help]

None

d. Proposed measures to reduce or control light and glare impacts, if any: [help]

12. **Recreation** [help]

a. What designated and informal recreational opportunities are in the immediate vicinity? [help]

None

b. Would the proposed project displace any existing recreational uses? If so, describe. [help]

No

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]

None

13. **Historic and cultural preservation** [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [help]

None

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]

None

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]

None

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required. [help]

None

14. **Transportation** [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]

The site is accessible via an existing private road from the Webb Hill road which connects to the McReavy road.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]

No

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]

None

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]

NO

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]

No

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates? [help]

There are typically less than 30 truck trips per day between the hours of 7 am and 5 pm. based upon operations for the past 23 years. The average number of daily customer deliveries in 2015 was 17 with the maximum being 32. In addition, daily employee trips to and from the site average about 6, vendor deliveries of polymer, quicklime, portable toilet servicing, and equipment repair/maintenance probably average less than 1 per day.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe. [help]

No

h. Proposed measures to reduce or control transportation impacts, if any: [help]

None

15. **Public Services** [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]

No

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]

None

16. **Utilities** [help]

a. Circle utilities currently available at the site: [help]
(electricity) natural gas, water, (refuse service) (telephone) sanitary sewer, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]

None

C. Signature [help]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Name of signee Roger A Hickey

Position and Agency/Organization President/ Bio Recycling Corp.

Date Submitted: February 18, 2016

D. supplemental sheet for nonproject actions [help]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.